## In the Claims

1. (Original) An apparatus for intended use in charging particles in a system for separating particles from a fluid flow, comprising:

a chamber including an inlet for receiving the particles and an outlet for discharging the particles; and

a rotor rotatably mounted in the chamber, the rotor having a generally nonpermeable outer surface for contacting and assisting in charging the particles.

- 2. (Original) The apparatus according to claim 1, wherein the rotor is circular, polygonal, or gear-shaped in cross-section.
- 3. (Original) The apparatus according to claim 1, wherein the chamber is generally cylindrical.
- 4. (Original) The apparatus according to claim 1, wherein the outlet is positioned below and generally opposite the inlet.
- 5. (Original) The apparatus according to claim 1, further including a partition projecting into the chamber adjacent the rotor.
- 6. (Original) The apparatus according to claim 5, wherein the partition is adjustable to vary the distance between an end of the partition and the rotor.

- 7. (Original) The apparatus according to claim 1, further including a motor for rotating the rotor.
- 8. (Original) The apparatus according to claim 1, wherein the rotor rotates at a rotational speed of between about 1,200 and 10,000 revolutions per minute.
- 9. (Currently Amended) The apparatus according to claims 1-8 claim 1, further including an electric field in the chamber.
- 10. (Original) The apparatus according to claims 9, wherein the electric field is created by a variable voltage source having a first lead connected to the rotor and a second lead connected to a wall of the chamber.
  - 11. (Original) A particle separation system including the apparatus of claim 1.
- 12. (Original) An apparatus for intended use in separating particles of a mixture, comprising:

a body including an inlet for receiving the electrically charged particles to be separated, a separation chamber, a first electrode for attracting particles having a first selected charge, and a second electrode for attracting particles having a second selected charge;

wherein the first and second electrodes are grid electrodes having a plurality

of elongated fingers extending along the separation chamber spaced apart from the body; and

a flow straightener positioned in or adjacent to the inlet for receiving and straightening a co-flow of fluid passing over and between the fingers of the grid electrodes.

- 13. (Original) The apparatus according to claim 12, further including a variable voltage source for applying a positive voltage potential to the first electrode and a negative voltage potential to the second electrode.
- 14. (Original) The apparatus according to claim 12, wherein the fingers on each electrode are connected to a common header.
  - 15. (Cancelled)
  - 16. (Original) A method of charging particles using the apparatus of claim 1.
  - 17. (Original) A method of separating particles using the apparatus of claim 12.
- 18. (Original) A method of separating particles from a particle mixture, comprising:

actuating a rotor to create a differential charge on the two or more constituent species of particles in the mixture; and

separating the differentially charged particles into the two or more constituent species at a location downstream of the chamber.

- 19. (Original) The method of separating particles according to claim 18, wherein the actuating step comprises rotating the rotor.
- 20. (Original) A method for separating electrostatically charged particles from a mixture, comprising:

introducing the charged particles to a separation chamber including a positive grid electrode for attracting negatively charged particles and a negative grid electrode for attracting positively charged particles; and

sweeping away corresponding particles from the grid electrodes using a straightened co-flow of fluid.

21. (Original) The method according to claim 20, further including the step of actuating a rotor in a mixing chamber upstream of the separation chamber to enhance the charge on the particles in the mixture.